SECTION 1

GENERAL REQUIREMENTS

1.1 REFERENCES

(1A) **VOLUME III**, *CONTRACT PROVISIONS*

(1B) **VOLUME V**, *OWNER - FURNISHED EQUIPMENT*

(1C) NAVIGATION AND VESSEL INSPECTION CIRCULAR (NVIC) 10-04, *GUIDELINES FOR HANDLING OF SENSITIVE SECURITY INFORMATION*

1.2 INTRODUCTION

This Section contains the Contractor Design and Provide general requirements, sometimes referred to herein as "Requirements," describing the functional, performance and technical requirements for the design, construction, and delivery of four (4) identical Auto and Passenger Ferry Vessels, hereafter referred to as the "Vessel(s)," to be used and certificated to transport 144 standard size Passenger Vehicles and 1,500 Passengers between certain properly equipped ports located on the Inland Waters of Western Washington. These Requirements apply to a design-and-build Contract, and as such, relate minimum (baseline) requirements regarding arrangements, function, operation, performance and other salient characteristics of all Vessels and their installed equipment. The Contractor shall be solely responsible for developing the design solutions and details consistent with the Technical Specification, and identifying and providing all necessary materials with the exception of the Owner - Furnished Equipment (OFE) specified in **VOLUME V,** *OWNER - FURNSHED EQUIPMENT* (Reference (1B)).

BE ADVISED: The Contract Bid Support Package provides OFE documents and drawings in Reference (1B) that contain specific installation instructions setting forth mandated installation procedures and precautions. The Contractor shall provide designs and installations that, at a minimum, meet and address all instructions and requirements as set forth in the OFE documents and drawings.

See the *AUTHORITATIVE AGENCY COMPLIANCE AND CERTIFICATION* Subsection in this Section of the Technical Specification below for further requirements regarding regulatory compliance.

In addition to the Technical Specification, the Contractor is obliged to comply with all other contractual documents.

At the end of each Section of these Requirements are Subsections entitled "**Phase II Technical Proposal Requirements**" and "**Phase III Detail Design and Construction Requirements".** These Subsections address deliverables (drawings, reports, samples, mock-ups, and others) that are to be submitted to the WSF Representative during the Technical Proposal preparation stage of the Work in the case of Phase II Technical Proposal Requirements, or the Detail Design stage of the Work in the case of Phase III Detail Design and Construction Requirements. These Subsections do not necessarily include all deliverables that should be developed and provided to communicate and document the Vessel's design and construction, nor do they necessarily repeat deliverables either explicitly or implicitly required by other Subsections of the Technical Specification or the Authoritative Agencies.

The Technical Specification does not, in general, repeat the requirements cited in Authoritative Agency publications which must be met in order to obtain the Authoritative Agency approvals and certifications required by the Contract. The Requirements also do not address peculiar requirements that may be imposed by the Authoritative Agencies relative to the design and construction details and methods selected by the Contractor for these particular Vessels, though conformance with all such requirements is required within the scope of this Contract.

For WSF Fleet-wide Standardization purposes, End No. 1 of the Vessel shall always be considered the bow, and this designation shall delineate port and starboard, fore and aft wherever they are addressed in the Technical Specification.

1.3 TERMS AND DEFINITIONS

The definitions and abbreviations given in the Contract apply to the Technical Specification, as supplemented by additional definitions included in particular Sections of these Requirements.

Where the term "Phase II Technical Proposal stage of the Work" is used, it shall refer to all Work to be performed by the Contractor during the period of time beginning on the date of the signing of the "Notice to Proceed" (NTP) to begin with Technical Proposal preparation, and ending upon written approval by the WSF Representative of the Contractor's design package.

Where the term "Phase III Detail Design and Construction stage of the Work" is used, it shall refer to all Work to be performed by the Contractor during the period of time beginning on the date of the Contract Award and ending on the date of Delivery of the final Vessel. This

stage of the Work shall include any required or necessary Detail Design Work, whether such Work occurs before or after construction Work actually begins on the Vessel.

Wherever the term "Work" is used throughout the Technical Specification, it shall have the same meaning as "Contract Work", as defined in **VOLUME III**, *CONTRACT PROVISIONS*.

See the Contract regarding Contract Time and Construction Time, and the associated Notices to Proceed.

1.4 SCOPE OF WORK

The Contractor shall satisfactorily perform all Work and details connected therewith to design, construct, equip, outfit, test and deliver to the WSF Representative, fully certificated and warranted, four (4) Auto and Passenger Ferry Vessels. Each completed Vessel shall fully comply with all requirements applicable to classification of the Vessel by the Authoritative Agencies, as well as all other salient Authoritative Agency requirements. Each Vessel shall be delivered new and complete in all respects and outfitted to the extent required herein.

Under this design-and-build Contract, the Contractor shall first develop Drawings, prescriptive Technical Specifications, and other design documentation satisfying the requirements of this document, and then construct the Vessels in accordance with the Contract documents, as supplemented by the Contractor-developed drawings and specifications. The Contractor developed design drawings and specifications provided in the Technical Proposal and approved by WSF will have precedence as assigned by the Contract. The reader is referred to Section 100 of the Technical Specification, and to the **VOLUME III,** *CONTRACT PROVISIONS* for further requirements regarding the control of the Work and related documentation. Refer to the Contract for additional scope of Work definition.

1.5 SENSITIVE SECURITY INFORMATION (SSI)

WSF takes Homeland Security very seriously. SSI is a specific category of information that requires protection against disclosure. Contract documentation designated SSI by WSF, and as set forth in Reference (1C) shall be distributed to, and safeguarded by Covered Persons as set forth in Reference (1C). All distribution shall adhere to a strict "need to know" basis. The Contractor shall assure that all sub-contractors also meet all requirements of Reference (1C).

Any distribution labeled as indicated below, shall be handled, safeguarded, and distributed as set forth in the below notice:

SENSITIVE SECURITY INFORMATION - FOR OFFICIAL USE ONLY

THIS DOCUMENT CONTAINS SENSITIVE SECURITY INFORMATION AS DEFINED BY THE REVISED CODE OF WASHINGTON (RCW) 42.17.310 AND CONTROLLED BY 49 CFR PART 1520. UNAUTHORIZED RELEASE MAY RESULT IN CIVIL PENALTY OR OTHER ACTION. NO PART OF THIS DOCUMENT MAY BE RELEASED WITHOUT THE WRITTEN PERMISSION OF THE DIRECTOR, WASHINGTON STATE FERRIES.

1.6 OWNER-FURNISHED EQUIPMENT, MATERIAL, SERVICES, AND INFORMATION

The Contractor is responsible for all Work necessary to deliver a completely operational, ready-for-service Vessel. This includes all Work, including all engineering and design, associated with the installation and testing of the propulsion plant, except that work, material, and information as specified in **VOLUME IV,** *TECHNICAL SPECIFICATION* of this Contract as being provided by the Propulsion System Integration (PSI) Contractor, SSDG Contractor, and WSF.

The equipment listed and described in **VOLUME V,** *OWNER-FURNISHED EQUIPMENT* will be furnished by WSF. The PSI Contractor and the SSDG Contractor have both provided construction bid support packages as part of the information in **VOLUME V,** *OWNER-FURNISHED EQUIPMENT*. This information may be used in preparation of Technical Proposals. In the case of the PSI Contractor some of the drawings in the construction bid support package may be updated with detailed design drawings which will be made available for the Contractors detailed design after "Notice to Proceed".

Communication and coordination makes up an integral portion of this Contract. It is a requirement of this Contract that close communication and cooperation between the Contractor and all OFE Contractors exists. The Contractor shall provide for, as part of his bid price and business plan; coordination services, schedule, and material for and in support of all Contractor and OFE Contractor required design, interface, set up, light off, adjustment, and testing for OFE equipment during both the Phase II Technical Proposal, and Phase III Detail Design and Construction stages of the Contract. System designs shall be part of a cooperative "hand in hand" effort between the Contractor and OFE Contractors to produce seamless system interfaces providing complete and operable systems which meet the intent and spirit of the Contract. All system coordination services shall be identified, priced, and scheduled as part of the *Master Construction Schedule (MCS)* Subsection in Section 100 of the Technical Specification.

The Contractor will receive Owner-Furnished Equipment (OFE) directly from the Propulsion System Integration (PSI) Contractor, Ship Service Diesel Generator (SSDG) Contractor, other OFE suppliers, and WSF. Upon receipt and prior to offloading, the Contractor shall notify the WSF Representative so that a WSF Representative can be present, and shall inventory and inspect the material and report immediately to the WSF Representative any shortages or damage. Correction of any damage to OFE after receipt by the Contractor is the

responsibility of the Contractor. The Contractor shall carry insurance to cover repair or replacement of damaged OFE. The Contractor shall care for the material as if he furnished it and in accordance with the following:

1. PSI Contractor equipment handling, storage and installation instructions shall be followed exactly.

2. Unload the OFE, attach a weatherproof tag to each material item, noting its source location, its future storage location, and its installation location aboard the Vessel. Maintain a list of all such items which includes the tag information, and annotate the list when the equipment is installed aboard the Vessel. Provide two (2) legible up-to-date copies to the WSF Representative each month.

3. Transport the OFE to where it will be stored and properly store the items. OFE units shall be stored in logical groups and adequately protected from weather, damage, and deterioration in an indoor heated, dry storage facility until such time as the units can be installed onboard the Vessel. Provide access for the WSF Representative to inspect the stored items during normal working hours.

4. When needed, load and transport OFE to the Vessel and install as required by applicable Sections of the Technical Specification.

All of the items listed in **VOLUME V,** *OWNER-FURNISHED EQUIPMENT* are new and were purchased for the Work. These items constitute the extent of Owner-Furnished Equipment (OFE). See **VOLUME IV,** *TECHNICAL SPECIFICATION* for selected additional information.

For bidding purpose, the Contractor shall provide, as part of his bid, 500 man-hours for this four (4) Vessel Contract, to be used, at the sole discretion of the WSF Representative, for moving OFE outfitting materials on and/or off the Vessels. These OFE outfitting materials are those materials over and above the OFE machinery and equipment to be permanently installed as set forth in other Sections of the Technical Specification. The 500 man-hours shall be adjusted upward or downward at the end of the Contract as appropriate to cover actual man-hour expended. All lifts shall be approved by the WSF Representative prior to each lift. Usage of lift man-hours, to date, shall be included and reported as a separate dedicated line item in each monthly progressing. Weight on or off shall be recorded on a Weight Report and monitored as set forth in the WEIGHT AND CENTER OF GRAVITY CONTROL Subsection of Section 1C of the Technical Specification.

1.7 UNITS OF MEASURE

All Work shall be performed and presented using English units of measure (feet, pounds force, seconds), except where other units are expressly permitted in writing by the WSF Representative, or required for specific elements of the Work.

1.8 HAZARDOUS MATERIALS PROHIBITION

During the course of design and construction, the Contractor **shall not** introduce any hazardous materials anywhere throughout the Vessel(s), including, but not limited to: asbestos containing materials (ACM), lead containing paint (LCP), and polychlorinated biphenyls (PCB).

WSF recognizes the fact that some system components can contain hazardous materials which cannot be reintroduced into the environment without special considerations and procedures. All such items falling under such a category shall be identified, in writing to the WSF Representative for written approval for use, **prior** to installation on the Vessel(s).

1.9 MATERIALS AND WORKMANSHIP

All materials, machinery, equipment, and components furnished by the Contractor shall be new, currently in production, and currently supported by spare parts readily available in the United States of America, unless otherwise specified.

All materials, machinery, equipment, and components shall be of high commercial marine quality, in full compliance with the Technical Specification, the requirements of the cognizant Authoritative Agencies, and suitable for the service intended.

Where required by the Technical Specification to conform to certain standards, like those by MARAD, USCG, ABS, ASTM, ASME AISI, SAE, IEEE, or other recognized agencies, those standards form a part of the Technical Specification and that requirement shall be clearly indicated on any purchase specification or order developed and issued by or for the Contractor.

All items or materials requiring USCG approval shall be on file with the cognizant local USCG Inspection Office.

During construction and before delivery, the Contractor shall be responsible for the protection of **all** material, machinery, and equipment (including that furnished by WSF (OFE)) intended for use in the Vessel. Owner - Furnished Equipment (OFE) and/or materials damaged through improper storage or handling shall be repaired and/or replaced at the Contractor's expense (not subject to reimbursement from WSF). All OFE and all material and equipment used in the Work shall be handled and stored in a manner that will prevent damage from careless handling, exposure to elements, or any other cause.

Unless otherwise specified, all machinery, structure and outfit is to be designed to withstand the resultant forces from the following conditions of service environment:

1. Permanent list of ten (10) degrees.
2. Permanent trim of five (5) degrees.

3. Double amplitude roll of thirty (30) degrees in a period of ten (10) seconds.
4. Double amplitude pitch of ten (10) degrees in a period of five (5) seconds.

All equipment, materials, or components used or installed in the Vessel shall be free from imperfections of manufacture and from defects which adversely affect appearance or serviceability. This includes all items provided in accordance with "make and model" call-outs on directed procurements, or on “or equal” specifications in the Technical Specification. All sharp edges or projections shall be removed.

Where aluminum must be attached to dissimilar metals or between dissimilar alloys of aluminum, unless specified differently in specific Sections of the Technical Specification, fasteners shall be Type 316 stainless steel, or better, as appropriate. Where other dissimilar materials are to be attached, the fastenings shall be as approved.

Pressure grease fittings shall be of the surface check push type made of stainless steel where exposed to weather and of zinc or cadmium coated steel elsewhere. The fittings shall be made accessible either with elbow bodies or extensions and shall be of the threaded type suitable for use with high pressure grease guns.

All galvanizing shall be done by the hot dip process, and the zinc shall be not less than 98-percent (98%) pure. In instances where it can be demonstrated that materials cannot be hot dip galvanized, zinc silicate coatings may be substituted when approved in writing by the WSF Representative. See Section 74 of the Technical Specification for additional requirements as to piping systems.

Except as otherwise specified, stainless steel specified herein shall be AISI 304 or 316L, finish #4 for interior applications. Weather applications shall be AISI 316.

Where zinc anode protectors are required, they shall conform to Specification MIL-A-18001 and the requirements of Section 14 of the Technical Specification.

1.9.1 “Or Equal” Substitution Requirements

With the exception of certain items which have been designated and specified for reasons of standardization with other Vessels of the Washington State Ferry fleet, names of manufacturers and trade designations of items are mentioned in the Technical Specification only as a means of describing the general function, quality, and construction of the various articles, equipment, or materials.

Subject to the exception noted above, it is not the intention of the Technical Specification to restrict the Contractor to the supply of specific articles, equipment, or materials to the makes or brands so named, but to provide a ready criterion for determining the type, quality, and construction of equipment that will be acceptable.

The substitution of an "or equal" item can only be approved by the WSF Project Engineer. Other WSF Representatives **do not** possess blanket authority to approve any substitutions. Demonstration of an "or equal" status is the full responsibility of the Contractor.

Requests for substitutions shall be made in **writing** to the WSF Project Engineer, setting forth the reason for the proposed substitution and providing complete documented evidence that it exhibits all of the following:

1. The substitute is substantially similar to the product specified in the Contract Documents in all the elements in the following list, to ensure that no adjustment to the equipment arrangement or operations would be required to accommodate the product's inclusion as a substitute into the Vessel(s)
    a. Dimensions
    b. Weight
    c. Power, HVAC, cooling water and other support services
    d. Suitability for marine service
    e. Material
    f. Time in service and population in commercial passenger vessel or WSF service
    g. Noise and vibration characteristics
    h. Interface characteristics, and
    i. Environmental factors;
2. Its characteristics, performance, reliability, maintainability, availability, vendor furnished training and documentation and other salient features fulfill the requirements of the product identified in the Contract Documents;
3. Its total performance will be such that its use will not adversely affect the intended performance or systems of the Vessel(s);
4. Its use will cause no increase in required maintenance or cause premature replacement; and
5. It exhibits equivalence or superiority to the specified product or material. The request shall also provide the Contractor's assurance that the substitution, if approved, will not result in any increase in the Contract Price nor an extension of the delivery date of the Vessel(s).

The approval of an "or equal" by WSF does not relieve the Contractor of resolving any problems or interferences that result from differences between the specified product and the "equal" product.

Where there is a directed procurement the Contractor shall provide only the specified item. If procurement of this item is impossible because it is no longer available, the Contractor shall request approval of a substitute, in writing, from the WSF Representative (Project Engineer) utilizing the procedure as specified above for "or equal" substitutions.

The WSF Project Engineer will respond to properly documented written requests within ten (10) working days of the receipt of the request, which must include **all** required supporting documentation.

NOTE: Should request(s) for "or equal" approval be of a type and/or size, or the sheer volume of requests makes it unreasonable for WSF to respond within the ten (10) working day period, the WSF Project Engineer will respond to the Contractor during that time to verify receipt of the request, state the reason that the request cannot be finalized within the ten (10) working day requirement, and give a reasonable date when the request will be processed and returned to the Contractor. All requests falling into this category will not be reason for any claim of delay by the Contactor. The WSF Project Engineer's decision will be the final word on "unreasonable" type/size/volume.

The Contractor shall, to the maximum extent practicable, standardize by minimizing the number of brands of like or similar components used. This applies within a system, across similar systems, Vessel-wide and among all four (4) Vessels being provided by this Contract. The Contractor shall ensure system-wide component standardization among all Vessels.

1.10 ACCESS AND MAINTENANCE

The machinery and equipment installed by the Contractor shall be located, supported, and connected so as to permit adequate ventilation and ready and safe access to all parts and components required for operation, inspection, service, maintenance and repair without disturbance of other structure and/or equipment.

Arrangements for examination, for access, and for cleaning and painting shall be provided for all compartments and all "pockets" in the Vessel. Access shall be by means of permanent ladders, walkways, platforms, doors, manholes, scuttles and/or bolted plates. Battens and gratings in storerooms and other spaces, and protective casings around pipes, shall be made readily removable.

Provisions shall also be made by means of bolted plates, portable sections of beams and stiffeners, and otherwise as necessary, to allow efficient dismantling of machinery, etc. for maintenance and overhaul.

The main fuel oil tanks and all voids shall be provided with two (2) accesses for cleaning and maintenance. Tank accesses shall be sized to allow easy visual inspection and a means of entry for maintenance, either through handholds or manholes, based on the tank size. All accesses shall be provided with proper gaskets, cover plates and corrosion resistant closure fasteners.

Restriction of access openings by pipes and/or valves is not permitted and ladders, where required, shall be located in line with access openings.

All trunks, casings and enclosures shall be large enough to facilitate servicing of piping, manifolds and similar appurtenances which may be contained in and/or passed through the space.

1.11 HULL PROTECTION

The Contractor shall maintain rigid control of welding and grounding for the protection of the hull, its systems, and appendages during the entire time the Vessel is in the custody of the Contractor (see the *WELDING QUALIFICATION AND CONTROL* Subsection in this Section of the Technical Specification below). The Vessel shall be properly grounded throughout the period of the Contract except when the Vessel is underway for Trials. The ground cable shall be sized in accordance with sub-paragraph 5 below.

To ensure proper control, the Contractor shall adhere to the following minimum requirements:

1. Welding power sources used on the Vessel, whether shore based or placed on the Vessel, **shall not** be used for any other Vessel or structure.
2. Ground (return) cables attached to the Vessel shall never be grounded to any other Vessel or structure.
3. All welding cable, electrode or ground, shall be completely insulated and shall never drape into the water.
4. Grounding contact surfaces shall be thoroughly cleaned to bright bare metal prior to connection. Grounding lugs shall be secured tightly to grounding plates and the connections periodically checked to ensure that they remain tightly bonded and corrosion free.
5. The total cross sectional area of ground wire shall be one (1) million circular mils minimum per 1,000 amperes per 100 feet.
6. Provide and maintain zinc anode protectors for corrosion protection. Hull potential shall be maintained in the range of +750 mV to +900 mV as measured on a certified USFILTER Electrocatalytic (formerly ENGELHART SYSTEMS) corrosion potential meter, silver-silver chloridem Model 33419-3, or FLUKE Electro-Guard Model 902 portable corrosion test instrument. One of the of the two shall be the only

meter used to measure hull potential. Contact for USFILTER Electrocatalytic is (908) 851-2277; Email: electrocatalytic@usfilter.com.

7. Hull potential readings shall be taken and recorded at least weekly prior to Vessel launching. Once the Vessel is launched (or a portion of the hull, as in tidal emersion of a portion of the hull while on a launching ways at high tide), hull potential readings shall be taken twice daily until satisfactory potentials have been obtained and at least once a day thereafter. A written log shall indicate the station at which each reading was taken, the amplitude and polarity of the reading, the time and date, and the name of the individual making the readings. The records of hull potential readings shall be made available to the WSF Representative upon request.
8. Any plates or clips welded to the Vessel for grounding purposes shall be in locations approved by the WSF Representative.
9. Provide an exact copy of the hull potential record, to date, to the WSF Representative in conjunction with progress billings. Progress payments **will not** be made until the required hull potential logs have been received by the WSF Representative.
10. All materials and labor required to install and maintain temporary cathodic protection needed to maintain an acceptable hull potential shall be provided by the Contractor.

The Contractor shall adequately protect the underwater portion of the hull prior to Vessel delivery. Care shall be taken that the welding polarity and ground connections of welding machines used on these Vessels, or other Vessels in the immediate vicinity, and on the pier to which the Vessel is moored shall be controlled in a manner that will protect the hull from damage due to electrolytic action.

1.12 TANK AND VOID INSPECTIONS

Prior to closing any inaccessible spaces or tanks during construction, the Contractor shall thoroughly clean the spaces or tanks to the satisfaction of the WSF Representative. Take special care in cleaning lubricating oil and hydraulic oil tanks and lines.

Should it become necessary to re-open any tanks or voids, or if any open tank or void becomes contaminated, the Contractor shall provide all services necessary to open, clean, and certify gas-free the tanks and voids prior to entry for work. All tanks and voids shall be tested gas-free prior to entry and shall be maintained gas-free throughout the period of the Work as required by WAC 296-304-020. All re-opening and gas-freeing of tanks and voids shall be at the Contractor's sole expense.

1.13 GAS-FREEING

The Contractor shall maintain clean and gas-free atmospheres in all bilge areas in the engineering spaces and throughout the Vessel as well as all tanks and voids.

Gas-free certificates shall be provided and maintained in accordance with the below *SECURITY AND SAFETY* Subsection in this Section of the Technical Specification.

1.14 DAMAGE INCURRED AT CONTRACTOR'S FACILITY

The Contractor shall provide all mooring lines and shall properly secure and protect the Vessel. In the event the Contractor permits the Vessel to become damaged, such as through grounding or contact with pier side or waterborne structures or equipment, the Contractor shall repair the damage at no cost to WSF. In the case of grounding, the Contractor shall dry-dock the Vessel immediately for inspection by the WSF Representative and the USCG, or, at the discretion of the WSF Representative, provide a third party diver with color video camera and recording equipment to inspect for underwater damage.

1.15 SECURITY AND SAFETY

The Contractor shall provide and maintain an adequate watchman service for the entire Vessel throughout the construction period and through delivery so as to protect the Vessel from damage, fire, flooding, and/or pilferage.

The Contractor shall be held responsible for and make good at his expense any and all damage of whatever nature and/or loss to the Vessel, and/or its machinery and/or its stores, outfit, furniture and furnishings, spare parts, tools and removable equipment.

The Contractor shall maintain heat on the Vessel in those spaces which are weather tight and outfitted as the project proceeds. The heat shall be sufficient to prevent inherent dampness which can effect outfitting materials. Heating shall be achieved through the use of Contractor-furnished systems. The use of the Vessel's heating system **shall not** be allowed without prior written approval of the WSF Representative.

All major equipment shall be provided enclosed on all sides in heavy gauge shrink-wrap plastic and cover with a tight plywood box during the construction phase of Work. The enclosures shall be served by heaters and dehumidifiers to prevent the collection of moisture. Major equipment is defined as Main Engines, SSDGs, Reduction Gears and clutches, shafting and bearings, switchboards, and any other equipment identified by the WSF Representative as in an environment for potential damage due to ongoing construction. The Contractor shall be responsible for any damage resulting from this Work, and all clean up after the Work is complete. The Contractor will be responsible to re-calibrate any damaged, removed and reinstalled, or relocated gauges or components.

The Contractor shall exert extraordinary measures to assure that in times of cold weather, systems onboard the Vessel are protected from freezing. All damage incurred from freezing shall be wholly the responsibility of the Contractor.

The Contractor shall provide and be solely responsible for providing all fire fighting protection on board the Vessel as may be required by various Authoritative Agencies, including the local fire department and/or Port Authority, during the Contract performance period.

As specified in Section 100 of the Technical Specification, at least thirty (30) days prior to start of construction at the Contractor's facility, the Contractor shall submit, for WSF approval, a Fire Plan.

As a minimum, where torch cutting or welding is being carried out on board the Vessel in the vicinity of combustible material, a properly equipped fire watch whose **sole duty** is fire watch shall be present. In cases where such hot work is being performed on an interior boundary, a fire watch shall be maintained on both sides of the boundary. As a minimum, fire watches shall remain on station after completion of the hot work until the affected surface and adjacent materials have cooled significantly to preclude all opportunity for fire, but in no case shall this time be less than thirty (30) minutes. The Contractor shall schedule fire watches and monitor the proper placement of the same.

All fire watch personnel and equipment shall be provided by the Contractor. Vessel fire fighting equipment **shall not** be used as fire watch equipment.

As soon as the Vessel is in the water, the following shall be provided by the Contractor:

1. Fire warp lines rigged from bow and stern.
2. An emergency telephone on the Lower Vehicle Deck with access to “911”.
3. A fire and flooding alarm system audible at all locations in the Vessel, including alarm pull boxes, in at least twelve (12) locations on the Vessel.

In accordance with State and Federal Law, NO SMOKING shall be allowed aboard the Vessel, within modules or components, and WSF facilities during performance of the Contract Work.

Until the area has been thoroughly cleaned and declared gas-free and safe for hot work and human occupancy by a Marine Chemist, no burning or welding will be allowed in tanks, bilge pockets, or any other locations where petroleum products have been present or which have been closed to the atmosphere. The Contractor shall provide: ***1).*** All work required to achieve the required degree of cleanliness; ***2).*** The services of the Marine Chemist; ***3).*** The Work, including personnel, required to keep the area safe while hot work is in progress.

The Contractor shall obtain and maintain up-to-date copies of the Marine Chemist's test certificates depicting the current status of unsecured tanks and voids in accordance with OSHA Regulations and as outlined herein. Copies of the test certificates and summary sheets certifying the status of all opened tanks and voids shall be posted by the Contractor at the following locations during **all** times that the tanks and voids are not bolted closed:

1. WSF's on-site office (summary sheets).
2. At the head or foot of all gangways to the Vessel.
3. EOS (summary sheets).
4. Each unsecured tank and void (individual certificate).

The Contractor shall protect dangerous areas such as access openings in the deck with suitable temporary hand rails and take all necessary and reasonable safety precautions to prevent injury to any person who may enter the Work area for any reason.

The name(s) and telephone number(s) of the Contractor's safety representative(s) shall be provided to the WSF Representative prior to beginning work so as to provide twenty-four (24) hours-per-day communication capability for safety-related issues.

1.16 DRY-DOCKING

1.16.1 General

Just prior to Dock Trials, the Contractor shall place the Vessel in dry-dock and thoroughly prepare and paint the below Main Deck surfaces of the hull as set forth in Section 14 of the Technical Specification.

All sea chests shall be opened for inspection and cleaned as necessary and shall be closed in good order.

The Contractor shall provide the WSF Representative with block positions used during the initial docking and subsequent block shifting.

If, after the final dry-docking and before delivery, the Vessel has continually been in the water for more than sixty (60) days, it shall be dry-docked and the bottom cleaned prior to delivery.

The Contractor bears total responsibility for all dry-docking evolutions which occur before acceptance of Vessel delivery by WSF.

Within thirty (30) days after the final dry-docking, the Contractor shall provide to the WSF Representative a Dry-docking Plan indicating the final docking configuration, suitable for use prior to the next dry-docking.

1.16.2 Painting and Preservation

To ensure that all portions of the underwater body are thoroughly prepared and preserved, the Vessel shall be shifted (bumped) on the blocks during the course of the final dry-docking phase.

Preparation and preservation shall be in accordance with Section 14 of the Technical Specification. Work associated with propellers, shafting and bearings, and rudders are described in the appropriate Sections of the Technical Specification.

1.17 LAUNCHING AND/OR MOVEMENT OF MAJOR HULL SECTIONS

The Contractor shall be responsible to provide for the safe and satisfactory launching of each Vessel and/or movement of major hull sections at such times as mutually agreed upon by the Contractor and the WSF Representative. Launching and outfitting shall be performed in a depth of water sufficient to ensure that the Vessel is not grounded at any time.

Thirty (30) days after laying of the keel for the first Vessel, the Contractor shall submit for launching and/or movement of major hull sections, a PRELIMINARY Launch Plan and PRELIMINARY Launching Calculations Booklet to the WSF Representative for review and comment. Sixty (60) days prior to launching and/or movement of major hull sections, the Contractor shall submit for launching and/or movement of major hull sections a FINAL Launch Plan and FINAL Launching Calculations Booklet to the WSF Representative for review and comment. The Launch Plan and Launching Calculations shall include any and all appendages added to the hull and/or cradle to aid in the launch. The Contractor shall update both documents as necessary to incorporate “lessons learned” from previous launchings, and submit copies of same to the WSF Representative for review and comment prior to subsequent launchings and/or movements following the same submittal time line required for the first Vessel. The Contractor shall exercise care in all launchings and/or movement of major hull sections to see that no undue strains are imposed on the hull or major hull sections.

If launching is from a shipway, after launching the Contractor shall perform an underwater hull inspection and videotaping to verify satisfactory hull condition. The Contractor shall provide two (2) CD-ROM or DVD-ROM copies of this videotape to the WSF Representative within ten (10) days after launching.

1.18 TRAINING OF WSF PERSONNEL

The Contractor shall provide, at his own cost, all necessary training required for the proper and safe operation and/or maintenance of each Vessel and all its equipment and systems. This training shall include, as a minimum, the training listed in **TABLE 1-1** below.

Lifesaving, fire fighting, safety and emergency systems and appliance training shall address maintenance and operation of the lifeboats, life raft embarkation slides, sprinkling and fixed fire extinguishing systems, as well as operation and location of the Vessel’s alarms, fire dampers, fire doors, HVAC, and all other Vessel emergency safety features and appliances. This training shall be conducted by factory-trained persons with appropriate knowledge of the attendant systems and appliances, but need not include representatives from each manufacturer. This training shall be formatted to include general safety/operational familiarization training for all of the Vessel’s personnel, and maintenance training for a total

of twenty (20) WSF personnel (except for the High Slide Marine Evacuation Systems (MES) which shall be provided for a maximum of seventy-five (75) WSF Personnel).

Required videoing of system training as set forth in **TABLE 1-1** below shall be provided in both VHS and DVD format. The Contractor shall provide seven (7) VHS copies and seven (7) DVD format copies of each system training session video. Individual system training shall be delivered on dedicated system VHS tape and DVD-ROM media copies. Training of different systems shall not be intermixed on a single media format copy.

The scheduling of training sessions shall be mutually agreed to by the Contractor and the WSF Representative. Training sessions shall be conducted either in a Contractor furnished conference room or onboard the Vessel as mutually agreed to by the Contractor and the WSF Representative. A training session outline for each session shall be presented to the WSF Representative for approval at least ten (10) working days before the training session is scheduled to occur.

The WSF Representative shall determine the number of personnel that are required to undergo this training and shall pay all salaries and subsistence costs for WSF personnel during training. The maximum number of personnel the Contractor is allowed to train at any session is ten (10) (except for the High Slide Marine Evacuation Systems (MES) which shall be for a, WSF approved, maximum number of personnel allowable by the system manufacturer and the USCG).

TABLE 1-1
Shipyard Training Prior to Delivery

System or Equipment	Duration of Training (hours per session)	Video Session
Hi-Fog® Fire Suppression System	16	No
Rescue Boats	4	Yes
High Slide Marine Evacuation Systems (MES)	4	Yes
Phone System	6	No
Elevators	8	No
Homeland Security Video Monitoring and Detection	8	Yes
HVAC System	12	No
Steering System	16	No
Fire Fighting Equipment & "FR" Circuits	12	Yes
Food Vending/Service Equipment	2	No
Machinery Startup and Shutdown	8	No
Vessel Cold Startup and Shutdown	16	No
Pilothouse Equipment	8	No
Sliding Watertight Doors	4	Yes
Searchlights	2	No
Power Actuation Door Systems	4	No
Transfer Procedures for Sewage, Fuel Oil, Potable Water, Dirty Oil and Oily Bilge Water	8	No
Anchor Windlass Operation	2	Yes
DBI/SALA Fall Protection Systems	2	Yes **(1)**
Heat Recovery System	8	Yes
SQUARE D Masterpact® NW circuit breakers	See Section 89 of the Technical Specification	No
WOODWARD EGCP-3 LS and EGCP-3 MC controllers	See Section 89 of the Technical Specification	No
BASLER DECS 100 voltage regulator	See Section 89 of the Technical Specification	No
POWERLINK® Control System	8	No
Ventilation Control System	40	Yes
Ventilation System Orientation/Operation	8	No

(1) Provide one (1) copy each medium per Vessel of the factory installed systems training video(s) on VHS and DVD-ROM format.

1.19 VIBRATION AND NOISE

All areas of the Vessel shall meet the vibration and noise guidelines of this Section and Section 102 of the Technical Specification. All Crew and Passenger accommodation and habitability areas shall meet Section 102 noise and vibration guidelines.

Some Sections of the Technical Specification specify certain measures to reduce noise levels and vibrations in the Vessel under operating conditions. These include details of ventilating ductwork, the use of isolation mounts under reciprocating machinery such as Main Engine, Ship's Service Diesel Generator sets, and acoustical treatment in the machinery spaces and elsewhere. In addition to these specific measures, the Contractor shall give particular consideration to the design and construction throughout the Vessel so as to minimize vibration and noise, both structural and airborne.

The Engineer's Operating Station (EOS), Engineer's Dayroom (EDR), No. 3 SSDG Enclosure, Emergency Diesel Generator Room (EDGR), and Chief Engineer's Office (CEO) in the machinery spaces shall be acoustical enclosures constructed in agreement with the WSF approved Technical Proposal, and in agreement with the requirements of the Technical Specification.

Sound pressure levels in the EOS, EDR, EDGR, and CEO shall be no more than that set forth in Section 102 of the Technical Specification. The Contractor shall pay particular attention to providing a detailed design and installation that minimizes sound paths between the Engine Rooms and the interiors of the EOS, EDR, EDGR, and CEO in order to achieve required sound pressure levels.

The Contractor shall be responsible to locate and correct unsatisfactory vibration or noise conditions arising during tests and/or trials, or subsequently during the warranty period.

Sections 7, 12, and Section 102 of the Technical Specification contain requirements for acoustic treatment for noise abatement.

1.20 GENERAL MISSION AND PERFORMANCE REQUIREMENTS

This Subsection in this Section of the Technical Specification describes, in general, the mission and performance requirements for the Vessels. More detailed requirements appear throughout this document.

Of paramount importance, the Vessels as designed and delivered by the Contractor must be capable of performing their missions which are identified herein. WSF **will not accept** any element of design, construction, installation or workmanship that compromises the ability of the completed Vessels to perform their intended missions.

1.20.1 Vessel Mission

The Vessels at time of delivery shall be capable of successfully performing the following missions:

A. Function as an Auto and Passenger Ferry Vessel serving the route system between existing WSF properly equipped ports located on the United States Inland Waters of Western Washington.

B. Substitute for other WSF Auto and Passenger Ferry Vessels in serving the domestic WSF route system.

1.20.2 Mission Requirements

The following shall be basic requirements for proper performance of each Vessel's mission:

1.20.2.1 Functional Requirements:

1. Accommodate legal highway auto traffic
   (within wheelbase and axle factor restrictions (see **RCW 46.44.041**))
2. Accommodate legal highway truck traffic (within lane restrictions)
3. Comfortably accommodate the maximum number of Passengers, with:
   a. Maximum seating and viewing space
   b. Amenities to provide a comfortable trip lasting from ½ to 1½ hours
   c. Flexible public space utilization
   d. Access for physically challenged Passengers
   e. Family-oriented public areas and accommodations
4. Accommodations for the specified number of Crew sleeping compartments and berths
5. Required Crew operating areas

1.20.2.2 General Vessel Requirements:

1. Qualify for U.S. Coast Guard certificates for Lakes, Bays and Sounds Passenger service with 1,500 Passengers, and a minimum of 144 Autos.
2. Satisfy all local, State, and Federal regulations, for the areas of operation and the ports-of-call, and the applicable IMO Regulations and recommendations, regarding the prevention of pollution and emissions.
3. Be designed and constructed for a sixty (60) year service life.
4. Have equipment chosen to achieve high reliability and system availability.

5. Minimize maintenance through choice of equipment and access arrangements.
6. Use proven marine technology.

1.20.2.3 Service Requirements:

1. Be able to dock unassisted and discharge and load Passengers and Vehicles at the dock facilities currently used by WSF Ferries.
2. Observe 18'-0" limit on navigation draft.
3. Have minimum 5'-6"; maximum 10'-6" freeboard.
4. Have minimum service speed of 17 knots at 80-percent (80%) maximum continuous rating (MCR) of two (2) Main Engines.

1.21 AUTHORITATIVE AGENCY COMPLIANCE AND CERTIFICATION

The Vessel shall hold a valid USCG Certificate of Inspection upon delivery. The Vessel shall comply with the latest USCG and IMO Regulations and recommendations for the prevention of pollution.

NOTE: As set forth in the *DELIVERY* Article of **VOLUME III** – *CONTRACT PROVISIONS*, the Contract Work shall be scheduled such that the Vessel will have the maximum possible USCG re-inspection interval when it is Delivered. Work such as life saving equipment certification, fire fighting/monitoring/alarm system certification, fire hose testing, life jacket inspection, and sea valve inspection shall be accomplished as near to Delivery as possible, but within sixty (60) days prior to Delivery in order to provide WSF with the maximum time before required USCG re-inspections.

The Vessel and all related Work shall be in compliance with the requirements of the various Authoritative Agencies and rules listed below in force at the time of "Notice to Proceed" insofar as they may apply or have jurisdiction:

A. United States Coast Guard (USCG) including all applicable Navigation and Vessel Inspection Circulars (NVIC).

B. United States Code of Federal Regulations (CFR).

C. United States Public Health Service (USPHS) including Publication No. 393, *Handbook on Sanitation of Vessel Construction*, and USPHS and Maritime Administration's joint Publication No. PB 161010, *Rat Proofing of Ships*, to entitle the Vessel to receive Deratization Exemption Certificate and Certificate of Sanitary Construction.

D. Center for Disease Control (CDC), *Recommended Shipbuilding Construction Guidelines for Cruise Vessels To Call on U.S. Ports.*

E. Underwriters' Laboratories, Inc. (UL), Applicable Standards for Electrical Equipment and Lighting.

F. American Society for Testing and Materials (ASTM).

G. IEEE Standard 45, *Recommended Practice for Electric Installations on Shipboard*.

H. SNAME Publication, *Ship Design And Construction.*

I. ASHRAE Standard 62-2001, *Ventilation for Acceptable Indoor Air Quality*.

J. Illuminating Engineering Society, *Recommended Practice for Marine Lighting*.

K. World Health Organization, *Guide to Ship Sanitation.*

L. International Rules of the Road (COLREGS).

M. Americans with Disabilities Act (ADA) (Refer to Section 1B of the Technical Specification for compliance intent).

N. Federal Communication Commission (FCC).

O. Washington State Regulations.

P. State of Washington Environmental Policy Act (SEPA).

The Vessel shall also comply with all requirements necessary to obtain the tonnage certifications required by Section 1C of the Technical Specification.

All regulatory requirements delineated in the publications of the various Authoritative Agencies, including but not limited to CFRs, shall be met as stated in the publications, irrespective of any waivers of such requirements that the USCG or other cognizant Authoritative Agencies may be willing to give with respect to the design and construction of the Vessel. WSF reserves the right to initiate waiver requests with cognizant Authoritative Agencies, in which case the Contractor shall provide access to technical data and other project data needed to support such requests.

The Contractor shall obtain and furnish all certificates and letters of compliance as may be required and/or issued by the USCG and other Authoritative Agencies for certification of the Vessel and its equipment for the intended service. All certificates and letters of compliance required and/or issued by the Authoritative Agencies shall be mounted on the Vessel.

This Technical Specification may invoke particular sections or requirements of American Bureau of Shipping Rules. The Vessel will not, in general, be designed to the Rules, nor classed, but specific elements of the Rules may be used to define materials or workmanship standards.

1.22 WELDING QUALIFICATION AND CONTROL

All welders performing Work in or on the Vessel, and in or on components or structures intended for use or installation in or on the Vessel, shall be proficient and certified for the type of Work that they are, or may be, assigned to.

All welding and brazing, procedures, and welder qualifications and certifications shall satisfy the requirements of 46 CFR §57, including ASME BPVC, Section IX. Although the Vessel

will not be ABS Classed, welds, weld procedures, and welder qualifications and certifications shall conform to the requirements of the ABS Rules for Building and Classing Steel Vessels wherever the requirements of 46 CFR §57 are not controlling.

The welding procedure, welder qualification, and welder certification requirements outlined in this Section and Section 2 of the Technical Specification are applicable to, and form a part of, every Section of the Technical Specification which may require the utilization of welding and welders.

Rigid control of welding and grounding shall be maintained for the protection of the hull and its systems and appendages as set forth in the *HULL PROTECTION* Subsection in this Section of the Technical Specification above. Control shall be maintained during the entire time the Vessels are in the custody of the Contractor, whether on the launching ways, waterborne, or in dry-dock.

1.23 DIESEL OIL, MACHINERY FLUIDS, POTABLE WATER & LIQUID WASTE

The costs of all diesel, hydraulic and lubricating oils, water and other fluids expended prior to the Vessel's delivery to WSF shall be borne by the Contractor within the originally Contracted price of Work. Similarly, the cost of removing and properly disposing of all used fluids which must be removed from the Vessel prior to its delivery shall be borne by the Contractor within the originally Contracted price of the Work.

Upon delivery of the Vessel, all diesel, lubricating and hydraulic oil tanks, potable water tanks and machinery sumps shall be jointly sounded by the Contractor and the WSF Representative. All machinery lubricating and hydraulic oil sumps shall be at normal operating levels at the time of the joint soundings. In cases where sump levels do not comply with this requirement, the sumps shall be filled by the Contractor before taking final soundings of the clean lubrication and hydraulic oil storage tanks.

All potable water tanks shall be filled to nominal 95-percent (95%) full levels and all waste tanks shall be empty to low suction at the time of the joint soundings. If these requirements are not met, the Contractor shall immediately take whatever steps are necessary to correct the discrepancies at the Contractor's expense.

WSF will reimburse the Contractor at his cost (i.e., without Contractor mark-up) for all diesel, hydraulic and lubricating oil in storage tanks on board the Vessel at the place of delivery as determined from the joint soundings. The Contractor shall provide supplier invoices to the WSF Representative for verification of the Contractor's unit costs.

WSF anticipates some limited preliminary Vessel Staff occupancy of each Vessel prior to Trials. This occupancy will follow the joint Compartment Close-out Inspection for that space by the Contractor and WSF. The Contractor shall provide all temporary (hotel) services (i.e. such as

potable water, power, heating, lighting, and sewage off-load) from the start of construction of the first Vessel through Delivery of the last Vessel under this Contract.

1.24 INSPECTION

The Contractor shall construct and equip the Vessel under the inspection of and subject to the approval of WSF, the USCG, and other Authoritative Agencies as provided by law, including but not limited to those listed in the above *AUTHORITATIVE AGENCY COMPLIANCE AND CERTIFICATION* Subsection in this Section of the Technical Specification

Prior to delivery, all Vessel compartments shall be inspected utilizing a formal Compartment Close-out Inspection Procedure as set forth in this Section, Section 100, and Section 101 of the Technical Specification. Compartment Close-out Inspections shall include all items not covered by a test procedure, including, but not limited to:

1. Hardware, including locks and door closures
2. Nameplates, signage and labels
3. Paint
4. Maintenance access
5. Calibration
6. Floor covering
7. Cleanliness
8. Station Bills
9. Drainage of drains

The WSF Representative shall be kept advised as to the progress of the Work as required by this Section and Section 100 of the Technical Specification and other pertinent Sections of the Technical Specification, and shall be provided free access to any and all parts of the Vessel and Work at any time during the life of the Contract.

The Contractor is wholly responsible for properly preparing and presenting all Work at major production milestone “hold points” as directed by WSF for acceptance and for giving twenty-four (24) hours advance notice to the WSF Representative. The Contractor is responsible for providing adequate notice to Authoritative Agencies as they require. The Contractor is wholly responsible to assure that the Work in question is complete, correct, has been pre-inspected by the Contractor's Quality Assurance Organization and is ready for inspection and acceptance. The Contractor is responsible for all fees resulting from regulatory inspection and/or certification.

1.24.1 Major Production Milestone Hold Points

At a minimum, it is the responsibility of the Contractor to ensure, that all required inspections are completed before continuing Work. The following check points and items in the Work **require** inspection by WSF **prior** to proceeding:

a. All Surface preparation, and coatings application as set forth in Section 14 of the Technical Specification.

b. All Equipment landing, alignment, isolation, and fastening.

c. All Structural fit-up, welding, back-gouge, and NDT (as set forth in Section 2 of the Technical Specification), and as required by Authoritative Agencies.

d. All work items under this Contract prior to that item being covered by ongoing Work, which would preclude the previous items' inspection for satisfactory completion.

e. All cableway and cabling installation.

f. All tank and void closures.

g. All testing.

h. All systems and equipment installations associated with this Contract.

i. OFE equipment "powering up" requirements as set forth in the *GENERAL* Subsection in Section 95 of the Technical Specification.

The Contractor shall present the major milestone portions of all Work prior to closure or covering of those work areas. Any Work that is closed or covered prior to obtaining required inspection, whether by WSF or an Authoritative Agency, shall be at the Contractor's risk and shall be opened and/or uncovered, if required by WSF and/or the Authoritative Agency, for inspection at the Contractor's sole expense.

Inspections, tests, measurements or other acts or functions performed by WSF are for the sole purpose of assisting WSF to determine with reasonable assurance that the workmanship, materials, rate of progress and quantities provided comply with the Contract and the Technical Specification. These acts or functions do not relieve the Contractor from at all times determining the Contractor's full compliance with the Contract, and shall not relieve the Contractor from any responsibility for the Work assigned by the Contract.

During the course of the Work, failure of WSF to discover materials or workmanship not in accordance with the Contract shall not be deemed as acceptance of the Work or materials or as a waiver of the provisions of the Contract.

No payment shall be construed as acceptance of any Work or material that is not in compliance with the requirements of the Contract.

Workmanship and materials not meeting the Contract requirements shall be made good. Unsuitable Work or materials shall be reworked and/or replaced at the Contractor's sole expense notwithstanding that the Work or materials may have been previously inspected or that payment may have been included in a progress estimate.

If WSF requests it, the Contractor shall remove or uncover such portions of any *previously* inspected and approved completed Work as may be directed. Should the Work thus exposed or examined prove acceptable to WSF, the uncovering, removing and replacing of the covering or the making good of the parts removed or repaired or replaced will be paid by WSF at actual labor rates. Should the Work so exposed or examined prove unacceptable to WSF, the uncovering, removing or replacing of the covering and the making good of parts removed, replaced or repaired shall be at the Contractor's expense.

NOTE: It is incumbent upon the Contractor to provide WSF with timely notification in order to preclude delays in required inspections. The Contractor is advised to schedule inspections in such manner so as to make it possible for his personnel to continue other production while WSF is inspecting the work item requested by the Contractor. It is not WSF's intent that the Contractor stop production to allow for required inspections. Inspections are to be an integral part of production and it is the Contractor's sole responsibility to plan, schedule and execute such plan so as to not delay production efforts.

1.25 TECHNICAL SPECIALISTS AND FIELD ENGINEERS

As part of the Work and within the original contracted price, the Contractor shall utilize the services of technical specialists and manufacturers' field engineers to monitor highly specialized Work. Such Work is expected to include, but not be limited to, on-site advisement regarding, or supervision of, critical equipment installation, alignment, initial start-ups, adjustments, calibrations and testing. For purposes of these services, "critical" equipment shall include the following:

A. Main Propulsion Diesel Engines (Main Engines)
B. Ship's Service and Emergency Diesel Generators
C. Propulsion Reduction Gears
D. CPP propeller systems
E. Electrical control and distribution systems
F. Oil-fired Waste Heat and Electric Water Heaters
G. Pumps and Compressors
H. Purifier
I. Power Actuation Door Systems
J. Watertight doors and hatches
K. HVAC systems

L. Steering Gear Systems and Rudders
M. Elevators
N. Radars
O. Communication systems
P. Global Positioning Systems
Q. Gyrocompass
R. Satellite compass
S. Hi-Fog High Pressure Water Mist Fire Suppression System
T. Universal Automatic Identification System (UAIS)
U. Automatic Draft Indication System (ADIS™)
V. All Alarm and Monitoring systems
W. Homeland Security Video Monitoring And Detection
X. Digital Electro-Optical Radiant Energy Fire Detection System
Y. Safety and lifesaving systems and equipment
Z. Security Systems

All services provided by technical specialists and field engineers shall be performed under the Contractor's expense and responsibility with the exception of those required for the Owner - Furnished Equipment (OFE).

Field engineer and technical specialist reports shall be furnished in accordance with the below *PHASE III DETAIL DESIGN AND CONSTRUCTION REQUIREMENTS* Subsection in this Section of the Technical Specification.

1.26 DELIVERY

The Contractor shall deliver the Vessel in accordance with the Contract and in a fully cleaned condition.

At the time of delivery, the Vessel, including all windows, must be thoroughly cleaned. All deck coverings shall be freshly waxed or cleaned as appropriate, and painted decks and plates freshly top coated. The finish coat of paint, the finish surfaces of furniture, etc., must be clean and in good condition. All bilges shall be clean and free from Shipyard debris.

Delivery of the Vessel will be as set forth in **VOLUME III,** *CONTRACT PROVISIONS*.

1.27 PHASE II TECHNICAL PROPOSAL REQUIREMENTS

(Not Used)

1.28 PHASE III DETAIL DESIGN AND CONSTRUCTION REQUIREMENTS

Documentation giving details of the Contractor's proposed welding and brazing procedures shall be provided at least thirty (30) days prior to start of fabrication. These procedures shall describe the intended processes and techniques, edge preparations, welding positions, type and size of electrode or filler metal, current values, shielding gas, and other pertinent details of welding and silver brazing as they relate to the Work being addressed, and shall meet the requirements of the *WELDING QUALIFICATION AND CONTROL* Subsection in this Section of the Technical Specification. Where such procedures deviate from the Contractor's standard practices, the deviation(s) shall be clearly identified in the submission.

Prior to presenting the Vessel(s) for Operational Acceptance, regulatory certificates and letters of compliance shall be provided in accordance with the above *AUTHORITATIVE AGENCY COMPLIANCE AND CERTIFICATION* Subsection in this Section of the Technical Specification.

A ***Docking and Underwater Survey Plan*** shall be provided incorporating actual dimensions taken from the Vessel before launching or while in dry-dock prior to delivery. The plan shall include the following information:

A. A plan view of the Vessel and the blocking arrangement.

B. Sections to illustrate the transverse blocking arrangement, including the midship and typical sections and areas where high blocking is required and stability in dock is a consideration.

C. A profile of the Vessel supported on the pier keel blocks.

D. Location of grid coolers, impressed current system anodes, and zinc anodes.

E. Location of keel blocks and side blocks in all three (3) docking positions.

F. Location of bitts and chocks on both profile and plan views.

G. Frame spacing of Vessel on Profile view.

H. Indication of major transverse bulkheads on Profile view.

I. Notes on the Profile view in the vicinity of the rudders and other removable appendages, specifying the clearance below keel bottom required for their removal.

J. Notes on the Profile view indicating the clearance required beyond the stern reference point for removal of shafting.

K. Table of critical dimensions.

L. Table of displacements and other properties for docking.

M. Trim table for propeller clearances.

N. A list of openings in the shell, together with locations and including, but not limited to, piping discharges and sea chests.

O. Tables of offsets for side block and keel blocks, as required.

P. That information as contained in WSF Drawing No. 8305-635-001-01, *UNDERWATER HULL SURVEY PLAN*, and any other information considered to be of aid in docking the Vessel.

Each field engineer and technical specialist utilized in accordance with the above *TECHNICAL SPECIALISTS AND FIELD ENGINEERS* Subsection in this Section of the Technical Specification, shall submit an interim progress report within five (5) days following each site visit describing the adequacy, quality and condition of the installation as applicable to their equipment or Work. Each field engineer and technical specialist shall submit a final installation report within ten (10) days following completion of installation and successful dockside testing and, if applicable, Sea Trial testing of the supplied equipment. Copies of all reports shall be provided to the WSF Representative in accordance with Sections 100 and 101 of the Technical Specification.

(END OF SECTION)